

02/2014

Mod: DSG-14B

Production code: ES14-(GAZ)



Diamond
catering equipment

TUMBLE DRYERS

INSTALLATION, USE AND MAINTENANCE INSTRUCTION



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1. INTRODUCTION

This manual refers to industrial tumble dryers installation, use and maintenance.

It is written in compliance with the European Community rules in force. The information here written are addressed to the installer and the user, who must be sure to fully understand them before to use the machine.

This manual must always be available for consultancy. In case it should be lost or damaged, ask for a new copy to the manufacturer.

The producer is not responsible for any consequence coming from a wrong dryer use because of a not complete or missing reading of this manual.

The manufacturer reserves itself the right to modify the specifications written in this manual or the characteristics of each machine. Some picture of this manual may differ from reality because of some detail. Diagram and technical data may be changed without any previous notice.

Manual and its attachments are parts of the machine themselves, so they must be kept together with the machine and follow the machine when it is sold to another user.

Attachments and exploded view with spare parts list can be retrieved in the technical area of the producer website.

Dryer serial number must be available when entering in the web site.



ATTENTION!

Manufacturer is not responsible for any possible wrong information here written, when this errors are due to a printing or translation error.

The manufacturer reserves himself the right to modify the product, when necessary or useful, without changing the main characteristics. Without any previous authorisation of the manufacturer, to copy completely or partially the text and the pictures of this manual is forbidden.

2. SAFETY RULES



ATTENTION! Chocking, injuries and permanent invalidity risks!

Not respecting the following instruction, may cause damages to people, things and animals.

Installation and maintenance of the here described machines must be trained by authorised personnel, which knows the product and respecting the European Rules in matter of industrial machines installation.

Reparation made in a not correct way may seriously compromise the user safety.

Instruction must be read with high attention before to make the machine work. Instruction must be available to all the people working with the dryer.

Here described tumble dryers must be used to professionally drying clothes and linen: any other use is forbidden, if not before authorized by the manufacturer.

Before to take out the linen from the dryer, be sure that the drum is stopped. Never pull your hands inside the drum, if it is still rotating.

Do not dry in the machine any other different object; do not dry linen, which entered in contact with dangerous stuff like explosives, detonating explosives or inflammables. Linen entered in contact with this substances, need to be rinsed or aired before to be dried.

Do not dry linen which has been soaked in substances dangerous for the operator health, like poison or cancerogenic stuff.

To avoid risks of fire or explosion, do not approach to the machine with combustible or inflammable substances.

The use of this machine is forbidden to people under 16 years of age.

Children must not play with this equipment.

Packing materials must be kept out of the reach of children.

Detergents must be kept out of the reach of children.

Children and pets must be kept away from the equipment door when it is open.

External supplementary connection to the machine release the manufacturer from any responsibility if they are not properly done.

WARNINGS

Working with opened sides is forbidden!



In order to avoid burnings or accident it is forbidden to remove, even temporarily, the protection panels and the safety systems!

It is forbidden to introduce bars, sticks or metallic objects inside the drum. In case of emergency, please follow always the here described procedures

Each time the dryer is starter, check always the safety device correct working!

To know the machine and its safety device working is compulsory!



BURNS DANGERS

The dryers, because of its nature, presents a burns danger.

Burns may be caused by:

- The contact with the linen taken out from the dryer;
- The contact with the door inside, following its opening;
- The contact with the heating batteries during the maintenance;
- The contact with the fluxing steam parts.

On the machines are fixed the following label, if one of them should be damaged, the user must replace it with a new identical one.



Stuck near dried linen exit.



External panels can reach high temperature during the machine working.

Dryer must always be used by trained personnel and with at least one other operator in the room!

READ CAREFULLY THE INSTRUCTION FOR OPERATING IN CASE OF BLACK OUT, AND INFORM ALL THE USER ABOUT THEM.



ELECTROCUTION DANGER

Any service on the electrical parts must by operated only by qualified personnel. Before to work on the machine, cut off the electrical

supply.

Power and controlled circuits can be modified only by manufacturer personnel, on the contrary the warranty condition expires.

On the electric board, the here below warning label was stuck. If this label should be damaged or unstuck, it needs to be replaced by an identical one.



OPERATOR PSYCHO-PHYSICAL CONDITIONS

User must be in perfect psycho-physical condition; during the working cycle, the user must always assume a vertical posture in front of the machine. Sudden or not controlled movement must be avoided because of the risks of dangerous knocks against the dryer chassis, i.e.: during the dryer unloading.

The other people in the laundry room do not have to distract the operator, who is working on the dryer.

While working, the operator do not have to be distracted by TV, radio or any source of distraction.



LIGHTING

In the room where the machine is installed, the lighting must be at least of 300-500 lux intensity; unpleasant flashing must be avoided.



ATTENTION!

These instructions do not cover all possible risks. User must always pay high attention and respect carefully the rules.

3. MANUFACTURER LIABILITY

The instructions written in this manual are not replacing, but completing the duties deriving from the safety and accident prevention laws.

With reference to what is written in this manual, the manufacture is not responsible when:

- The machine use does not respect safety and accident prevention laws in force;
- The machine was not correctly installed;
- Periodical and/or programmed maintenance is missing;
- Manual instruction was not respected;

- Defects occurred in the power supply;
- Not authorized modification made on the machine;
- The machine is used by not authorized personnel.

4. UNPACKING

The machine must be controlled at the delivery moment, any external or inside damage dues to the transport, must be reported immediately to the forwarder.



ATTENTION!

Moving the machine, remember that the dryer centre of gravity is located in the last third of the machine height.

Machine must be completely unpacked next to the installation place. Straps must be cut and the covering packing material must be taken off. Packing materials must be wasted following the rules in subject of environment protection. Using a key, take away the nuts on the machine base which are fixing the dryer to the pallet (frontal and back).



ATTENTION!

Check the machine net and gross weight on the technical data sheet sent with the machine: it must comply with the available lifting means.



ATTENTION!

Pallet cannot be used as normal dryer support! The machine must always be installed without the pallet and positioned as described in the relative paragraph.



ATTENTION!

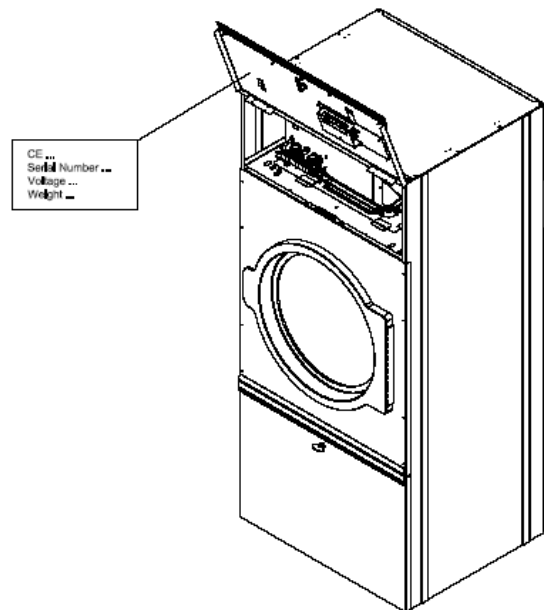
The machine can be moved only when it is fixed on its pallet: the machine handling must be done only by trained and competent personnel.

5. MACHINE IDENTIFICATION

The dryer is identified by the sticker reporting the machine serial number, model, power and technical characteristics.

Be sure that the electrical, hydraulic, steam, gas, compressed air connections are complying with the sticker data.

Spare parts and / or services require the correct model identification.

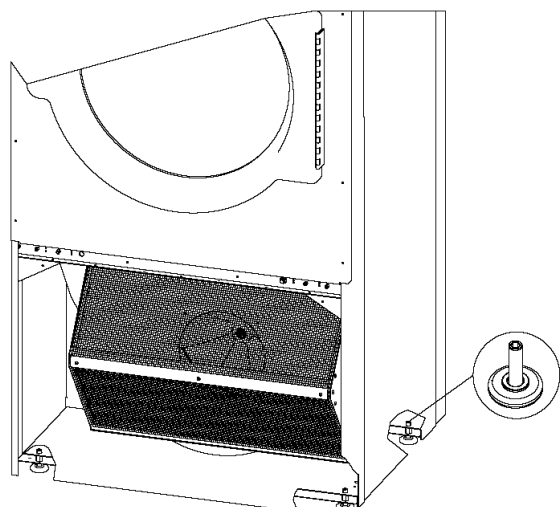


If the serial number sticker is tampered, missing, removed or damaged in a way that does not allow a correct machine identification, the dryer installation and service can be difficult and the warranty automatically expires.

6. INSTALLATION AND POSITIONING

Installation must be trained by qualified personnel. Machine must be positioned on a plane surface horizontally and in a stable way using the adjustable feet at the dryer base. Feet can be adjusted from outside, screwing and unscrewing them until the dryer is correctly positioned.

In models where it is provided, the feet can be adjusted from inside using a 5mm hexagonal key after the filter door and the back panel have been opened



Always check if the floor can bear the machine weight written in the technical data sheet. The machine load can be considered totally static. To calculate the dryer static load, the weight of the

wet linen to be loaded must be added to the dryer net weight.

Be sure the floor is clean and high temperature resistant.

For a correct machine use, working and service, leave at least 500 mm free surface around the dryer.

The room temperature must be between +5°C and +40°C.

Protection class is IPX4.

The room where the machine is installed, must have enough air change. Please note: the machine takes air from the room where it is installed and blow off the humid air coming from the drying cycle to the outside.

The dryer must not be installed behind a door which can be closed with a key, a sliding door or a door with hinges mounted on the side opposite to the tumble dryer.

Do not install or use a machine if it is damaged.

Do not install a machine in a position where the door cannot be completely open (a suitable kit can be provide to change the door hinge from left to right and vice versa).



ATTENTION!

Clean air must be assured to the machine; air combined with chlorine, fluorine or other solvent vapours must be avoided.

Do not use or stock near the machine benzene, petroleum or other inflammable stuffs. On the contrary fire or explosion may be caused.

Keep near the machine a foam extinguisher which is periodically controlled in compliance with the rules in force.

7. INSTALLATION: GAS HEATED MACHINES SPECIFICATIONS

Each gas heated machine must be considered, independently from the capacity, a gas equipment.

During the installation, the following rules must be respected:

- territorially building and fire-prevention rules;
- accident prevention rules;
- CENELEC rules (electric system);
- Rules about the combustible gas use
- Rules about gas system supplied by public net or GPL gas
- Rules coming from the gas company
- Rules coming from the electricity company
- Other possible local rules.

Air inlet and ventilation openings can be closed only if the opening condition is controlled and only if the flame of the gas heated equipment is

possible only when air inlet and ventilation are open.

The room is correctly aired, even when the gas exhaust is mechanically operated, if the nominal thermal pollution of this gas equipment do not cause depression in the room. In this way a regular gas combustion and the complete exhaust of the burn gas are guaranteed.

To dimension the air grating, please refer to the data written on the machine technical sheet and to the rules in force. In this way a regular gas combustion and the complete gas exhaust are guaranteed.

Air inlet dimensions must comply with the technical sheet requirements and with the subject rules in force.

In case the dryer supplied with liquid gas is installed in a basement, forced ventilation system must be provided.



ATTENTION!

Never installed a gas heated machine in the same room where machine using solvents are installed (example: dry cleaning machine) .

This combination could produce dangerous substances for the operator and it can cause steel corrosion.

If a gas heated machine and a machine using solvents are installed in two separate room, be sure that there is no possibility of air exchange between the two rooms.



ATTENTION!

In case of machine equipped with a tilting system, the machine must be fixed to the floor using some screw anchor.

Machine must be installed perfectly horizontally on a floor without elastic reaction.



ATTENTION!

In case of titling machines, there are external parts which moves during the linen loading and unloading steps.

For machine dimensions and machine needed space during the movement, please refer to the technical data sheet.

8. NOISE LEVEL

The air noise produced by the machine is producing an A continuous and weighted acoustic pressure lower than 70 dB.

In case that more machine should be mounted in line, the sums of the acoustic pressure are:

2 machines: air noise < 73dB

3 machines: air noise < 75dB
 4 machines: air noise < 76dB
 5 machines: air noise < 77dB

9. ELECTRIC CONNECTION

Electric connection must be carried out by qualified technicians and must comply with local and national rules in force. Check if the supply data corresponds to the data written on the machine plate.

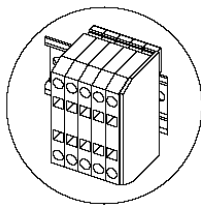
To connect the machine use a H05 VV – F cable or superior, it must be correctly dimensioned following the data label.

Install before the machine a omnipolar disconnecting device (i.e.: a circuit breaker) which need to have a contact opening that allows the complete disconnection in case one of the conditions of the over tension III category is verified. This device must comply with the subject regulation in force.

Check the main switch, it must be in position "0". Open the electric supply door. Open the electric supply door.

Pass the electric supply cable through the cable holder supplied with the machine. The cable must be correctly dimensioned (check the following table).

Electric supply cable connection must be done on a series of marked terminal.



Following the kind of heating, which is indicated on the serial number plate, connect the cable to the terminals, as indicated:



: ground, colour: yellow/green

L1, L2, L3: phase, colour: brown

N: neutral, colour: blue

In case of installation or replacement of the supplying cable, the ground cable must be at least 5cm longer than the other cables.

The electric diagram is contained in an envelope, near the electric board.



ATTENTION!

Check the fan rotation direction: it must rotate in the direction which allows the exhaust air discharge; it means that the fan motor must

rotated in the direction indicated by the arrow marked on the motor cover.

Check that the phases are connected in the correct sequence.

The machine must be connected to an efficient ground system: the supplier is not responsible in case this connection is not operated in compliance with the subject rules in force.

Before to do any maintenance cut the electricity supply to the machine: for maintenance refer to the machine electric diagram, which is inside the machine; anyway, it can be retrieved in any moment in the manufacturer web site.

The minimum section for the electric cable are indicated in the attached technical data sheet and are expressed in mm².



ATTENTION!

The technical data minimum sections can change according to the connection length. In case the cable is longer than 5 meters, the cable diameter must be proportionally increased.



ATTENTION!

The machine connection must always be made respecting the data written in the serial number plate (power, supply tension, frequency). For voltage different from the one provided, ask for more information to the manufacturer.



ATTENTION!

For machine equipped with drum or fan speed control, it means for machine equipped with inverter, a protection by RCD kind B device must be provided (sensible to the current medium value).



ATTENTION!

In case the machine is equipped with a supply cable, and the cable is damaged, it must be replaced by the manufacturer or by the authorized technical service; anyway only qualified personnel can service the machine, in order to prevent any risk.

10. GAS CONNECTION

If the machine is gas heated, the necessary connection with distribution system must be made: check the machine serial number plate data, especially supply gas pressure.

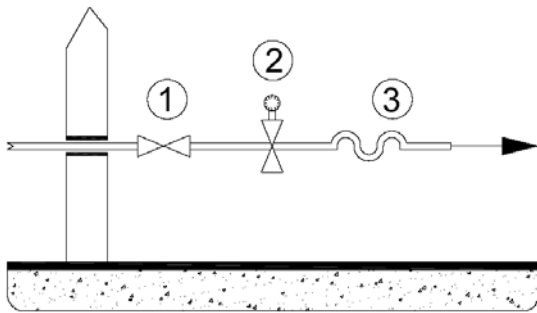
**ATTENTION!**

The gas maximum pressure admitted is 50mbar. To supply the gas with an higher pressure, even for short time, may damage the valve.

The gas distribution system must be realised in compliance with the rules in force and it must respect the sections and the pressure suitable for the installed equipment. .

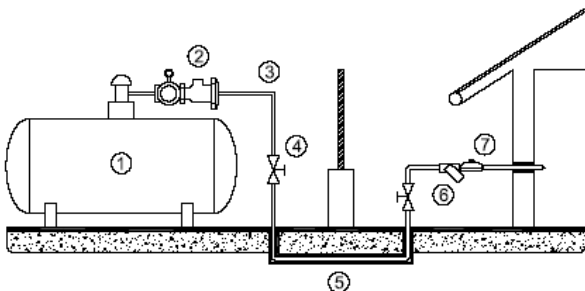
Look to the following picture: before the machine must be installed a rapid gas interceptor cock (1); the gas cock must be near the dryer and in an easy reachable position. The cock must comply with the rules in force and must be an approved model.

A low point pressure switch must be provided (2). The connection to the gas system must be made using a no-vibration joint (3); if flexible tubes are used, these must be in stainless steel DIN 3384 or DIN 3383.



The gas system must be realised in compliance with the rules in force. The dryer gas connection has a dimension, which is written in the technical data sheet; this dimension do no must be reduced.

The next picture shows how the machine should be connected in case of gas cylinder with high pressure: in this case a two steps reduction system is necessary; it must be realised in compliance with the rules in force.



A first 1.5mbar governor must be connected after the high pressure gas cylinder (1), after that a safety valve with the appropriate dimension must

be installed (2).

The high pressure tube (3) is interrupted by an interceptor cock (4) and then it follows protected (5) below the compartments division area border.

Before to enter in the room where the machine is installed, a second interceptor valve must be provided and then a filter (6) and a second governor (7) which brings the pressure to the correct working value.

11. GAS CONNECTION: TIGHTNESS TEST

All the joints between system and dryer must be tightness tested .

To make this test, it is suggested to use a leak finder spray; otherwise the joints can be covered with a foamy substances, which must not be corrosive. In both cases, bubbles must not be created.

**ATTENTION!**

It is forbidden to use free flame for the tightness test!

12. GAS CONNECTION: THERMAL POWER

Each dryer tested in the factory is prepared for the kind of gas which is written in the sticker near the serial number plate.

If the machine is predisposed for a gas which does not correspond to the kind available in the installation place, then it is compulsory to make the dryer adaptation. In this case, the authorised after sales centre must be informed.

The dryer working with the expected thermal power depend on the inlet pressure and the gas calorific power, but also depend on the nozzle, the gas pressure arriving to the nozzle and from a correct supply of primary air.

The pressure of the gas arriving to the machine must be included in the limits written on the gas type tables. If the pressure is not included in the limits written in this manual, the dryer cannot be started.

If the verified gas pressure is different from the tables values, please contact the gas company or the company which realised the gas system.

The GAS Lower Calorific Power, which must be asked to the gas company, must correspond to the one indicated in the technical data table.

13. GAS CONNECTION: GAS INLET PRESSURE CONTROL

The inlet gas pressure must be controlled using a digital or liquid measure tool. (precision: at list 0.1 mbar).

- Close the interceptor device.
- Open the sealing screw of the gas valve pressure tube connection indicated with "Pin".
- Connect the manometer.
- Open the interceptor device.

- Start the dryer following the user instruction
- Check the inlet pressure, with the burner working.
- Switch off the dryer.
- Close the interceptor device.
- Take off the monometer.
- Close the screw of the gas valve pressure tube and control the tightness.
- Open the interceptor device and control test the tightness.

The dryer must not working if the gas pressure is out of the limit shown in the reference table.

14. GAS CONNECTION: FINAL TEST

Once the connection works are taken over, the equipment and the installation must be controlled. It is necessary to control:

- that the connection are made respecting the instructions written in this manual;
- that the safety rules and the laws about this subject are respected;
- that gas connection are tightness tested.

Switch on the machine following the user manual instructions controlling the burner lighting on and the flame aspect.

Do a gas test with the volumetric method. Using the gas contactor, control how much gas was used in a fixed time unit: this value must be compared with the values in the tables.

15. HUMID AIR AND BURN GAS EXHAUST

The humid air and burn gas exhaust system must be realized following the rules in force.

To avoid lack of humid air and noise, the exhaust

joints to the outside must be made tight with high temperature resistant material (filler, putty, silicone preparation).

Gas heated tumble dryer are B22 equipment, it means they are gas equipment which depend on a aired room without any wind protection device with blower behind the burning room.

Dryer burned gas must be brought outside through a chimney.

Burn gas and humid air pipe must be the shortest possible one and it must be rising to the exhaust chimney.

In the lowest point a condenser drain must be provided, this drain derivation must observe the local rules in subject of water drain connection.

The dryer is equipped with a suction fan which produces its typical noise while working.

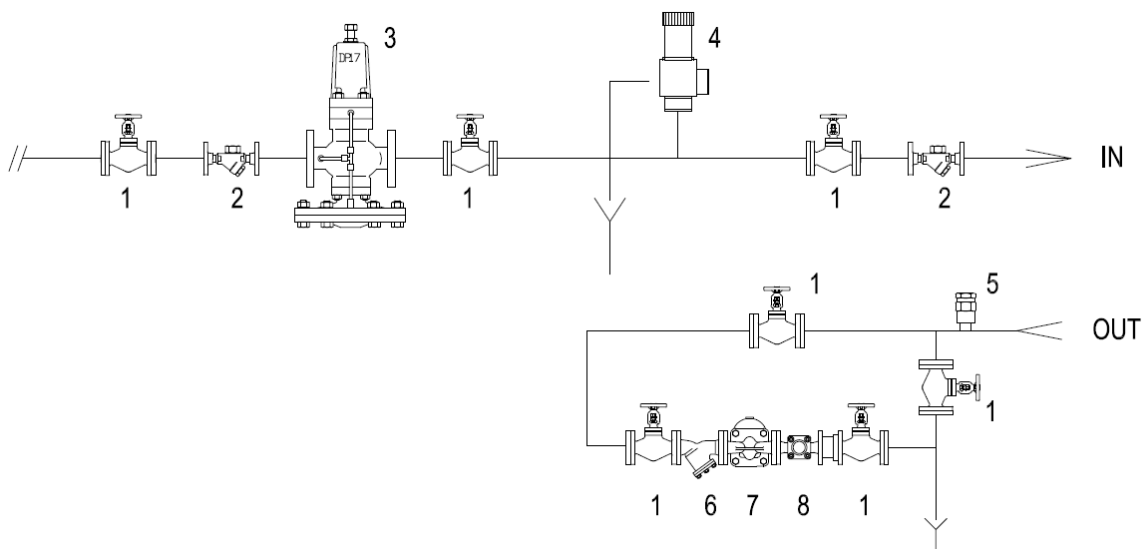
To reduce the noise level, a muffler can be installed on the drain (it can be found in specialised shop).

16. STEAM CONNECTION

Only for steam heated tumble dryers, a connection to the steam system must be provided. This connection must be performed by qualified personnel in compliance with the national and local rules in force.

Steam must satisfy the minimum requirement which are written in the technical data sheet; all system parts must be certified.

The steam system must be realised following the below diagram:



System elements are identified as below::

- 1) On - off valve;
- 2) Filter;
- 3) pressure reducing valve (if necessary)

4) Safety valve

IN) Machine steam exchanger inlet

**ATTENTION!**

In order to be efficient, the safety valve must be of a adequate size to provide to the maximum steam system rate.

- 5) Vacuum breaker valves
- 6) Filter
- 7) Inverted bucket steam trap
- 8) Flow indicator
- OUT) Machine steam heater outlet

**ATTENTION!**

Drying productivity depend on the steam heater efficiency.

Dryer can work with the steam pressure range referred in the technical data sheet, anyway lower is the pressure, more poor are the machine performance. In order to avoid too much longer drying time, the pressure should be at least 5bar.

17. COMPRESSED AIR CONNECTION

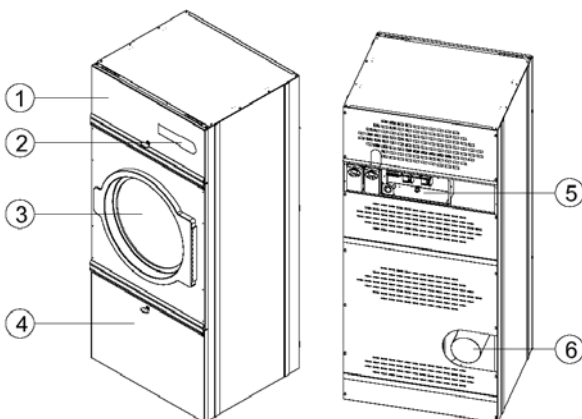
Connection to a compressed air system is necessary for some dryer models: check the equipment data sheet.

System must be performed by qualified personnel in compliance with national and local rules in force.

Connection between system and dryer must be tight tested; it is suggested to use a leak finder spray. In case of air leaks, stop them.

18. MACHINE DESCRIPTION

The dryer is characterized from some elements which must be known before to use the machine.



The point nr 1 identifies to the heater door. In case of service, the door can be opened using the plastic key supplied with the machine, inside the documents envelope.

Only competent and specialized personnel is allowed to access to the electric board.

The point nr 2 identifies the control board area, which can be electronic (microprocessor) or electro-mechanic (double timer).

The point nr 3 identifies the door of the dryer.

The point nr 4 identifies the filter door. It must be open each time the filter needs to be cleaned. The access to the filter must be allowed only to specialized an competent personnel.

The point nr 5 identifies the electric connection box and a part of the electric system.

The point nr 6 identifies the humid air exhaust (always) and the burn gas exhaust (in case of gas heated machines).

**ATTENTION!**

Air intakes on the machine back must be always free. The air passage must not be limited in any way.

19. PREPARE THE LINEN

Dryer must be loaded on the base of the data written on the serial number plate: the dryer must not be loaded with a weight above the nominal load written on the serial number plate.

Before to decide the most adequate program, divided the linen into groups, which should be homogeneous for kind of fabrics or fibres, in order to reach a uniform drying inside the drum.

Only spin linen must be loaded into the dryer.

Always be sure that batcher or other object are not among the linen.

Be sure that, during the washing, softener (or similar products) were used in compliance with the linen manufacturer instructions.

Before to dry the linen, be sure that the garments instructions allow the tumbling. The linen must be wet washed.

Below some international symbol explication:



Normal temperature drying



Low temperature drying



Do not tumble.

**ATTENTION!**

Do not use the machine if chemical products were used to wash.

Do not use the machine in case of self-igniting fabrics.

Linen to be dried must not have been in contact with dangerous substances such as

explosives, detonating or flammables.

In case of linen soiled with cooking oil, acetone, alcohol, petrol, Kerosene, stain removers, turpentine, wax and substances to remove wax, it must be washed in hot water with an enough quantity of detergent to completely remove these substances. This linen must be well rinsed and aired before to be dried.

Subjects such as foam (latex foam), shower caps, waterproof textiles, items with at least one side of rubber, garments or pillows with latex foam parts, and each fabric containing rubber parts, must not be dried.

Do not dry linen which was not washed before.

Be sure that softener and similar products are used in compliance with their instructions.

Check the padded garments: do not the dryer with damaged padded garments.

Closes zippers; buttons the down jackets, ties ribbons and laces. Empties the pockets.

Metallic elements such as buckles, hooks, closures, must be wrapped in a cloth to protect the dryer drum from scratches and shocks, which could also damage the linen itself.

20. START A PROGRAM

Switch on the main switch to supply electricity to the machine.

In case of steam heated machines open the gate valve to let the steam enter. To limit water hammering, open the gate valve slowly: from closed to open position in one minute time.

In case of gas heated machine open the gas interceptor valve.

Be sure that the emergency stop button (on the model equipped with this option) is in the correct position, that it has not been activated during last working cycle or during the transport.

Before to start the machine, safety devices need always to be tested (see the corresponding paragraph).

When the machine is starter, software release date and version are displayed.

vers. 2.19
27/10/13

After that the display shows:

DOOR OPEN

While the door is open, the above message is displayed by turns with the date and the time.



08:55
Saturday 09 November 13

The dryer is ready to be loaded. Before to introduce the wet linen inside the drum, be sure that the drum is completely empty.

The machine must be load with the most possible homogeneous linen; loading weight must not be above the one indicated in the technical data sheet and in the serial number plate.

Once the dryer is loaded, close the door.



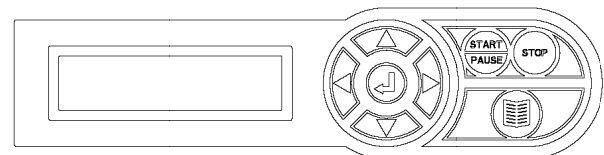
ATTENTION!

Closing the door, be sure that pieces of linen do not stay closed between the door and the dryer front panel.

When the door is completely closed, the display shows:

SELECT A PROGRAM

To select a program, scroll down the programs list using the following keys:



- to scroll ahead: ► or ▲
- to scroll back: ◀ or ▼

When a program is visualised, its name and its position in the list are displayed (the name can be modified: see the relative paragraph). Example:

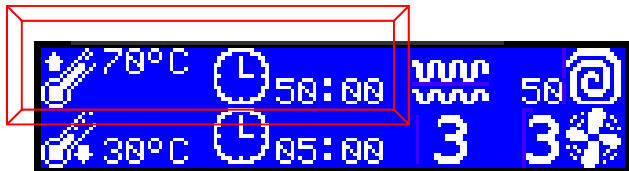
70°C 50'

PROGRAM 03

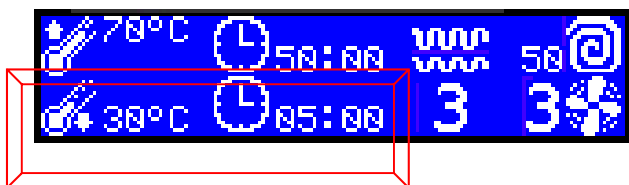
The characteristic of the program can be verified before to start the cycle; in effect, after few

seconds the display will show the drying parameters.

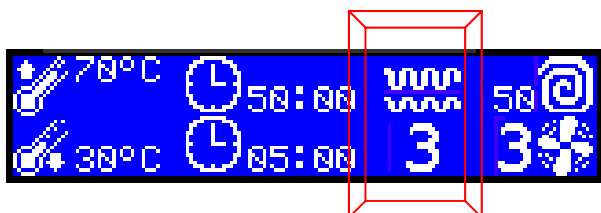
Program parameters visualisation may be anticipated or deleted using the ENTER \leftarrow Key. Here below the parameters description:



The parameters shown above on the left are the drying cycle temperature and length. In our example the cycle will reach a maximum temperature of 70°C and will be 50 minutes long.



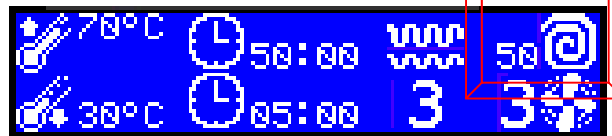
The ending part of a drying program is a not heated cycle (called cooling) which is necessary to assure the integrity of the garments. The box on the above pictures marks cooling temperature and the cooling cycle time. The machine will complete the cycle as soon as one of this two parameters is reached. In the above example the cooling cycle will be ended within 5 minutes or the temperature is lower than 30°C.



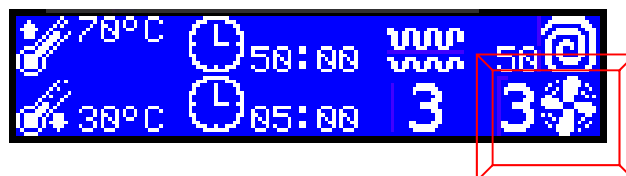
In the above picture the drying heating power is marked (only in case of machine equipped with the power control option). The dry heating power are three:

- level 1: minimum power
- level 2: medium power
- level 3: maximum power

the level must be selected according to the kind of fabric to be dried. Higher is the selected level, quicker will be the temperature increasing inside the drum.



In the above picture the red box marks the drum rotation speed (only in case of machine equipped with the DSC option).



In the above picture the red box marks the fan rotation speed (only in case of machine equipped with the FSC option). Suction speed levels are four:

- level 1: very low speed
- level 2: low speed
- level 3: medium speed
- level 4: high speed

The selected level correspond to the air passage speed inside the drum: higher is the selected level, quicker is the air passage inside the drum.

When the wished program is displayed, press the START/PAUSE key to start it.



ATTENTION!

For a correct ironing cycle, the selected program should assure a 10 – 20 % of linen residual humidity at the end of the cycle.



ATTENTION!

In case of damages or working anomalies, shut off the dryer and call the authorized service centre.



ATTENTION!

At the end of the program the line must never be left inside the stopped machine: you may run into a phenomenon of auto combustion!

21. PROGRAM DELAYED START

To select the program follow the instructions given in the previous paragraph, but instead to press

START/PAUSE, press the key MENU:



The display shows:

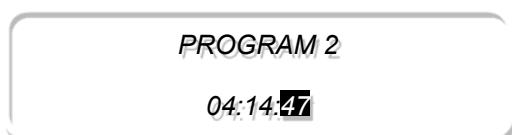


The time on the left is the current one, on the right the starting time is flashing.

The start can be delayed at maximum for 24 hours.

Use the keys ▼ and ▲ to fix the wished starting time and press ENTER ◀ or START.

The display shows:



Below the name of the program a countdown shows how many hours, minutes and seconds are missing to the automatic start.

The countdown can be stopped at any time pressing the key STOP or MENU.

Once the countdown is ended the cycle will be automatically started.

If the door is opened during the count down, the machine stays in pause (see the appropriate paragraph).

22. PROGRAM PAUSE

While the program is running, it can be temporary or definitely interrupted.

Pressing the key START/PAUSE the program is temporary interrupted.

The display shows:



If the dryer door is open, the display shows:



The pause is stopped when the door is closed

again and the key START/PAUSE is pressed. The program will start from the point where it was interrupted.



ATTENTION!

When the door is open during a dryer pause, please note that the linen temperature could be very high!

23. PROGRAM STOP

The program can be definitely interrupted at any moment, just pressing the STOP key:



ATTENTION!

A tumble dryer should never stopped before the drying program end, unless all the items are extracted and hang out to cool them down.



ATTENTION!

Do not leave the hot linen inside the stopped machine: you could run into a phenomenon of auto combustion.

24. PROGRAM STEPS

The drying program is composed by two steps: heating and end cooling.

Each one of these two steps has two characteristic value: temperature and time.

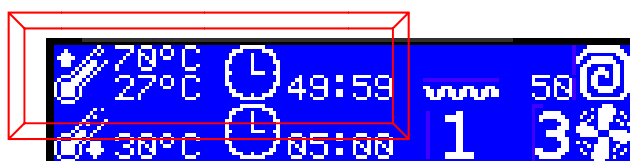
During the heating step the machine is drying for a certain time at the fixed temperature.

During the cooling time, the machine cools the linen for the fixed time or up to arrived to the fixed temperature: the step will finished when one of the two parameters is reached.

While the program is running, it is possible to check all the fixed parameters.

During the heating step, the set point temperature is always highlighted (in our example: 70°C): the real drum temperature is flashing below on the right (in our example: 27°C).

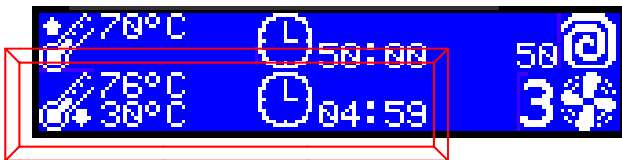
On the right it is indicated the time remaining to the end of the heating step (in our example: 49' and 59").



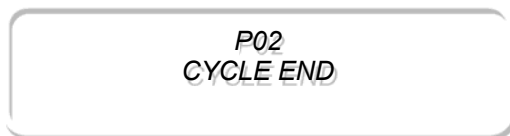
The end part of the program is a not heated cycle (cooling step) to be sure that the linen is not damaged.

During the cooling cycle the set point temperature is always displayed (in the below example: 30°C) and the real drum temperature flash on the above line (in the below example: 76°C)

On the right of the cooling temperature, the remaining time is displayed (in the below example: 4' and 59").



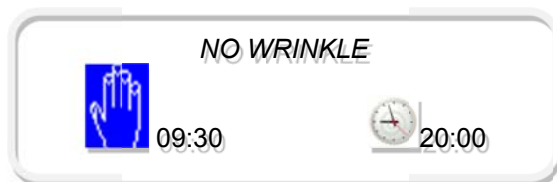
The cycle end is signaled by a 10 seconds buzz. The display shows:



The name of the program just ended is displayed (in the example: the program nr 2). The message stay displayed until the STOP key is pressed or until the door is opened.

In case the STOP key is not pressed or the door is not open, if the no wrinkle function is on (look to the relative paragraph), the drum will start to turn again following the set value.

No wrinkle step can be interrupted pressing the STOP key or opening the door. Anyway this step will stop at the programmed time or at the end of the programmed length.



The waiting time before the no wrinkle step start is displayed on the left. The no wrinkle step length is displayed on the right, this value will become a countdown as soon as the step will start.

NOTE: A previous drying step can be added to the program, if an INITIAL COOLING is programmed.

NOTE: using the key ► it is possible to activate a rapid advance and stop the heating step passing directly to the cooling step. This function must be enabled by IMESA After Sales Service.

25. END OF A WORKING DAY

At the end of the working day, the dryer must be

put at the end of the cycle and switched off: the drum must be emptied and cleaned.

Close all the energy supplies to the dryer using the appropriate line switches: electricity, gas, steam and compressed air.

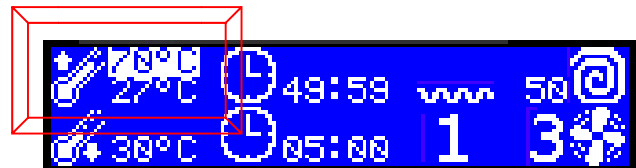
The dryer door must be left open.

26. PARAMETERS MODIFICATIONS DURING THE CYCLE

While the program is running, the parameters can be modified: this changes are not saved.

To modify a program while it is running, press the key MENU or the key ENTER ◀◀.

The display shows:



The temperature set point is highlighted with a with background.

Each time that a parameter is highlighted in this way, its value can be increased or decreased with the key ▲ and ▼.

All the displayed parameter can be modified: to move from on parameter to another one use the keys ◀ and ▶.

Once all the necessary changes are made wait for a while: after few seconds the visualisation of the parameters will come back to the usual way.

User can make as many changes as he wants, at any time and in any cycle step.



ATTENTION!

Program modification must be operated only by trained personnel.

27. MANUAL CONFIGURATION

Cycle can be run also in a manual configuration: when the linen was loaded, set the main drying parameters..

To use this configuration, press once the key ▲ or ▶ while the display is showing "SELECT A PROGRAM".

The display shows:



Press the key ENTER or START.

The display shows:



Using the keys ▲ and ▼, the drying time can be increased or decreased up to the wished value. Once the wished time is visualised, press START or ENTER.

The display shows:



Using the keys ▲ and ▼, the drying temperature can be increased or decreased up to the wished value.

Once the wished temperature is visualised, press ENTER and then start or directly START.

The manual cycle start.

The set value stay in memory as default value for the next use of a manual cycle.

As explained for the programs value, also in this case parameters can be changed during the drying cycle (see the previous paragraph).

28. SAVED PROGRAMS

The machine is delivered with 30 configured programs. In the next page a table is resuming the each program parameter.

Program can be freely modified as explain in the relevant paragraph.

In case of dryers equipped with reversing drum option, the default reversing times are:

- right: 40 seconds
- pause: 5 seconds
- left: 40 seconds

Rotation and pause times can be modified (see the relevant paragraph).

In case of machine equipped with the other options, the default parameters are the same in all the programs:

- heating power: level 3
- Drum Speed: 40 rpm
- Fan Speed: speed 2



ATTENTION!

The used temperature must comply with the temperature indicated on the garments manufacturer instructions label.



ATTENTION!

Yellow stains on the linen means that the detergent was not well rinsed or the linen was dried to a temperature higher than the allowed one!



ATTENTION!

Wrinkles on the dried linen can be caused by a too much longer waiting time after the program end. If this event occurs often, the no wrinkle cycle should be activated.



ATTENTION!

Sensible difference in the thickness of the fabrics (may be caused by seams) may cause a uneven drying.



ATTENTION!

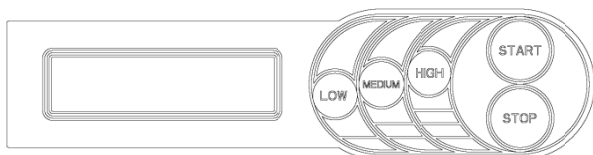
Avoid to dry garments with plastic buttons or fabrics with synthetics seams. High temperatures may cause the plastic melts and consequently the drum could be soiled.

PROG.	TYPE	DRYING		COOLING	
		°C	Min.	°C	Min.
01	RESIDUAL HUMIDITY	90	DRY	40	3
02	RESIDUAL HUMIDITY	80	IRON DRY	40	3
03	RESIDUAL HUMIDITY	75	DRY	40	3
04	RESIDUAL HUMIDITY	60	DRY	40	3
05	TIME	50	50	40	3
06	TIME	40	50	40	3
07	TIME	90	40	40	3
08	TIME	80	40	40	3

PROG.	TYPE	DRYING		COOLING	
		°C	Min.	°C	Min.
09	TIME	70	40	40	3
10	TIME	60	40	40	3
11	TIME	50	40	40	3
12	TIME	40	40	40	3
13	TIME	90	30	40	3
14	TIME	80	30	40	3
15	TIME	70	30	40	3
16	TIME	60	30	40	3
17	TIME	50	30	40	3
18	TIME	40	30	40	3
19	TIME	90	20	40	3
20	TIME	80	20	40	3
21	TIME	70	20	40	3
22	TIME	60	20	40	3
23	TIME	50	20	40	3
24	TIME	40	20	40	3
25	TIME	90	15	40	3
26	TIME	80	15	40	3
27	TIME	70	15	40	3
28	TIME	60	15	40	3
29	TIME	50	15	40	3
30	TIME	40	15	40	3
Coin Op dryers					
HIGH	TIME	90	50	40	3
MEDIUM	TIME	80	50	40	3
LOW	TIME	70	50	40	3

29. COIN OP DRYER: HOW IT WORKS

In case the dryer is prepared to work with a payment system (central cash, coin box, prepaid keys, etc.), the keypad is modified to allow the user to choose among three programs: LOW, MEDIUM, HIGH.



If one of the keys LOW, MEDIUM or HIGH is pressed, the cost of the program is displayed. For example, when the user press the key LOW the display shows:



It means that the minimum price for a cycle is 2€.

According to the system configuration, when the coins are inserted, the display shows the residual amount to complete the cycle purchase.

When the price is entirely paid, the display shows:



When the START is pressed, the cycle is started. During the drying cycle, a sliding line reminds to the chosen program and to the missing drying time in minutes and seconds.



During the cycle, the drying program can be changed just pressing the new program key: the selection will be automatically updated without any machine stop.



ATTENTION!

In case the selected program should be changed while the cycle is running, and the new program values are different, the credit time will be proportionally modify.

In case the field "ADVERT" was configured (see the relevant paragraph), the advertising message is displayed by turns with the selected program name:

TODAY SPECIAL OFFER ...

Should the door be opened, or the key PAUSE or STOP be pressed, while the cycle is running, the dryer would be in stand-by. The credit time count down continues also during this pause.



ATTENTION!

If the pause is longer than 5 minutes, the credit is automatically lost.



ATTENTION!

If the door is opened during the cooling step, the cycle is definitely stopped and brought to the end. The credit is not lost, because the payment needs only to buy drying time and not cooling time. While the cooling time is running, the selected program cannot be changed.

5 minutes before the drying cycle end, the display shows the message "INTRODUCE COINS IF YOU WANT TO BUY MORE DRYING TIME". This sentence is followed by the minimum price and the corresponding minimum time that can be brought.

INTRODUCE COINS IF YOU WANT ...



4:45

30. HOW TO ACCESS THE PROGRAM AREA

Default parameter value can be modified entering in the user menu.

While the machine is stopped, press the key MENU:



The following message is displayed:



Digit the 6 figures code pressing 6 time the START/PAUSE key. The display shows a star for each digit.

Once the sequence is completed, the display shows:

PROGRAMS



From this point it is possible to start to program. Using the keys ▲ and ▼ scroll up/down the programming areas:

- PROGRAMS
- LANGUAGE
- DATE/TIME
- ENERGY CONSUMES

The following paragraphs are explaining how to manage these areas.

To exit from on menu, just press STOP or MENU.

If the machine is equipped with a payment system, the access to the program area can be made keeping pressing the STOP key within 30 seconds from the machine switch on (power on). Program menu allows to make all the necessary operation. The below table match the standard version keys with the coin op version keys:

Standard configuration	Coin Op configuration
START	START
STOP	STOP
LEFT: ◀	not available
RIGHT: ▶	not available
DOWN: ▼	LOW
UP: ▲	HIGH
ENTER: ◀↵	MEDIUM
MENU	not available

31. PROGRAMS

To enter in the program area, please follow the instruction given in the previous paragraph. When the display shows "PROGRAMS ▲▼", press ENTER ◀▶.

Scroll down the programs with the key ▲ and ▼ until it is displayed the name of the program that you want to modify.

When the wished program is displayed (in our example the number 3), press ENTER ◀▶. In this way it is possible to enter in the program n. 3 parameters modification. The parameters list can be scrolled up and down using the keys ▲ and ▼.

From this point use the keys as explained below:

- The keys "▲▼", to scroll the available parameters.
- The key "ENTER ◀▶" to enter in a program and modify it.
- The keys "▲▼" to modify the value while it is flashing.
- The key "ENTER ◀▶" to confirm the displayed value.
- The key "◀▶" to change the cursor position to write the PROGRAM NAME.

Here below the program which can be modified and their possible values.

PROGRAM NAME

Program description displayed during the program selection and execution. It can be maximum 16 character long.

PROGRAM TYPE

This parameter is used to make the program works in an automatic way (deciding the residual humidity at the end of the cycle) or in a traditional way (deciding the cycle length). The two parameters are:

- HUMIDITY
- TIME

RESIDUAL HUMIDITY AT THE CICLE END

(only programs "WITH RESIDUAL HUMIDITY")

Select the value of the residual humidity at the end of the cycle, once this value is reached the cycle is ended:

- IRON DRY
- DRY
- EXTRA DRY

WDT T SET

(only programs "WITH RESIDUAL HUMIDITY")

In this area can be fixed the safety time for the program stop and the set point temperature for the automatic cycle.

- DRYING TIME OUT: 1' ÷ 120'
- TEMPERATURE: 0°C ÷ 90°C

N. STEP

(only programs "TIME")

A number of heating steps (or cooling steps) can be set:

- 1 ÷ 10

STEP 1

(only programs "TIME")

For each step composing the cycle, it is possible to decide the drying temperature and the step length:

- TIME: 1' ÷ 120'
- TEMPERATURE: 0°C ÷ 90°C

STEP 2 ... 10

For each step composing the cycle, it is possible to decide the drying temperature and the step length:

- TIME: 1' ÷ 120'
- TEMPERATURE: 0°C ÷ 90°C

COOLING TIME

It corresponds to the length of the cooling cycle at the end of the drying cycle. This time is automatically reduced if the set point cooling temperature is reached before the end of the cycle:

- 0' ÷ 30'

COOLING TEMPERATURE SET POINT

It is the cooling temperature which determine the end of the drying program. If the cooling time elapse before the temperature is reached, the program end however.

- 0°C ÷ 90°C

REVERSING DRUM

(with machine with reversing options)

In case the machine is equipped with a reversing option, this function can be excluded from the program.

If the parameter "WITHOUT" is selected, the drum turn always in the same direction (right).

- WITH
- WITHOUT

DRUM RIGHT ROTATION TIME

(machines and programs WITH REVERSING DRUM)

It is the drum clockwise turning time:

- 0" ÷ 5'

DRUM STOP TIME

(machines and programs WITH REVERSING DRUM)

It is the drum rotation pause:

- 1" ÷ 5'

DRUM LEFT ROTATION TIME

(machines and programs WITH REVERSING DRUM)

It is the drum counterclockwise turning time:

0" ÷ 5'

DRUM SPEED

(dryers equipped with DSC option)

It is the drum speed in round per minute:

20rpm ÷ 80rpm

FAN SPEED

(dryers equipped with FSC option)

It is the humid air suction fan speed level

1 ÷ 4

POWER LEVEL CONTROL

(dryers equipped with a power level control)

This parameter allow to reduce the heating power of the electric heater:

MIN 1

MED 2

MAX 3

STARTING COOLING LENGTH

(dryer where this function is activated)

Length of the initial cooling cycle before the drying cycle.

0' ÷ 30'

32. LANGUAGE SELECTION

To enter in the program area and change the language, follow the instructions given in the pertinent paragraph.

When the display shows:



Press ENTER ◀ to

The language (ITALIAN, in our example) starts to flash. Scroll down/up the languages list using the key ▼ and ▲. When the wished language is displayed press ENTER to confirm.

Exit the menu using the keys STOP or MENU.

33. DATE/TIME MODIFICATION

To enter in the program area and change the date and the time, follow the instructions given in the pertinent paragraph.

When the display shows:



Press ENTER ◀ to

The year (in our example 2010) starts to flash.

Using the keys ▼ and ▲ it is possible to modify the value of each data.

Using the keys ◀ and ▶ it is possible to modify

the value of each data.

When all data/time parameters are fixed, press ENTER to confirm.

Exit the menu using the keys STOP or MENU.

34. ENERGY CONSUMPTION

To enter in the program area, follow the instructions given in the pertinent paragraph.

Please note, the data given in this area are correct only if the installer correctly set the machines at the test moment.

When the display shows:

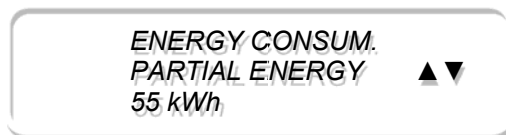


Press ENTER ◀ to display the dryer energy consumption. The display shows:



The display shows how much energy has been used starting from the installation day.

Press ▼. The display shows:



The display shows how much energy has been used starting from the last hour counter reset.

Press ▼. The display shows:



Press ENTER ◀ to reset the counter. A flashing "NO" is displayed: press ▼ or ▲ to change it in "YES". Press ENTER ◀ to reset.

Exit from program area using the key STOP or MENU.

35. NO WRINKLE

To enter in the program area to activate or deactivate the no-wrinkle function, follow the instructions given in the pertinent paragraph.

When the display shows:



NO WRINKLE ▲▼

Press ENTER ◀ to enter in the NO WRINKLE menu.

The parameters which can be modified are the following:

- NO WRINKLE: possible value are:
 - o YES: no-wrinkle cycle will start after the cooling end, if the door is not open and respecting the parameters fixed below.
 - o NO: no-wrinkle cycle will not start after the cooling end, even if the door is not open.
- END CYCLE PAUSE: it is the waiting time after the end of the cooling before the no wrinkle cycle start; it is expressed in seconds.
- FORWARD: it is the right rotation time in seconds. Value valid only for the no wrinkle cycle.
- PAUSE: how long the drum stopped. Time expressed in seconds. Value valid only for the no wrinkle cycle.
- BACK: it is the left rotation time in seconds. Value valid only for the no wrinkle cycle.
- MAX TIME CYCLE: no wrinkle length before the dryer definitely stops.

36. INITIAL COOLING

To enter in the program area to activate or deactivate the initial cooling, follow the instructions given in the pertinent paragraph.

When the display shows:



INITIAL COOLING ▲▼

Press ENTER ◀ to go into the parameter menu and ▼ or ▲ to select YES or NO.

Press ENTER ◀ to confirm the selected option. If it is selected YES, then an initial cooling time can be set in each program: it is a beginning cycle, which start together with the program start before the normal heating cycle.

37. PAYMENT SYSTEM

If the machine is equipped with a payment system, there are some special parameter which are not available in the standard version.

These parameters are the ones into the ADVERT menu or into the COIN BOX menu, plus two additional parameters which can be only read:

- TOTAL CREDIT: total amount of the credit, starting from the installation date.

- DAILY CREDIT: total amount of credit of the day (starting from 00:00).

38. ADVERT

The "ADVERT" menu is available only in case of Coin – Op Dryers.

To enter in the program area, follow the instructions given in the pertinent paragraph.

When the display shows:



ADVERT ▲▼

Press the key MEDIUM to display the advertising text, which will run on the display while the dryer is working.

The display shows a cursor to indicate where it is possible to write:



ADVERT

If the line with the cursor is completely empty, there will be no messages appearing while the dryer is running.

To compile the message, use the keys following the here below explain logic:

- START pressed for less then 1 second: the cursor moves through the text.
- START pressed for 2 seconds: add one figure at the left of the selected position.
- START pressed for 5 seconds: erase the selected letter.
- HIGH, LOW to move among the possible value for the selected figure.

The available characters are 29.

39. COIN BOX MENU

The "COIN BOX MENU" is present only in case of Coin Op dryers.

To enter in the program area, follow the instructions given in the pertinent paragraph.

When the display shows:



COIN OP MENU

Press MEDIUM to set the coin box.

Using the LOW and HIGH keys, it is possible to scroll the menu parameter.

When the wished parameter is displayed, press MEDIUM to confirm and, while it is flashing, use the LOW and HIGH keys to modify its value.

Once the wished value is displayed, press again MEDIUM to confirm. Here below the parameter

list of this menu:

- COIN: it identifies the currency that will be displayed.
- TOKEN 1: it identifies the value (expressed in currency) of each impulse given to the electronic board input (terminal identified by TOKEN 1).
- TOKEN 2: it identifies the value (expressed in currency) of each impulse given to the electronic board input (terminal identified by TOKEN 2).
- DECIMALS: number of decimals shown when the price is displayed:
 - o XX: no decimal
 - o XX,X: one decimal
 - o XX,XX: two decimals
- AUTOMATIC START:
 - o If "YES": when the payment has been completed, the cycle automatically start.
 - o If "NO": when the payment is completed, the cycle start only if START is pressed.

To exit the menu or to go back to the previous program level, just press STOP one or more time.

40. EMERGENCY STOP BUTTON

In case a quick machine stop is needed, press the emergency stop button (if present).

When the emergency stop button is pressed, the drum stops and the dryer is turned off.

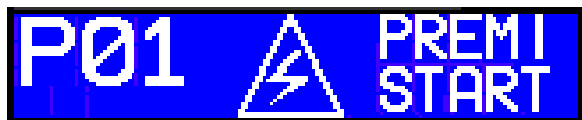
When the emergency ends, set again the emergency stop button, turning it in the direction written on it.

41. BLACK OUT

In case of black out, one or more clothes may stay in the drum and they could risk to catch fire.

In this case, open the door, unload the dryer and leave it opened.

When the electricity will be restored, the display will show:



The interrupted program number is displayed (the number 1, in our example), pressing Start it is possible to start it again.

Load the machine again and close the door: the cycle will be started from the point where it was interrupted.

42. WHAT MUST BE DONE IN CASE OF GAS SMELL

In case the room where the dryer is installed smell of gas:

- stop immediately the program;
- open immediately all the door and

windows;

- close immediately the valve ore the gas gate valve before the machine;
- do not light on the room illumination, matches or lighter;
- do not smoke;

Call the installer to check the gas leak.

43. DISPLAYED WARNING

The microprocessor reports both in case of a no-correct dryer working and in case of a simple highlight of a status.

Here below a complete list of the possible displayed alarms.

In case one of the following alarms should be displayed, please contact an authorized service centre to solve the possible problem.

Each one of the following alarms is also acoustically signalled by a buzzer.

In case of a dual timer dryer, there is no possibility of warning: in case the machine should stop, ask directly to the authorized service centre.

NO FLAME

In case of a gas heated dryer, the following alarm could be displayed:



When this alarm is displayed, the dryer continues to work, but the heating system is stopped waiting for a reset. To start again the heating, press the key ENTER ◀↵.

Control if the gas tap is open. In case the alarm is shown often, ask for a check to the service centre.



ATTENTION!

In case of coin op dryer, the above message is replaced by: "NO FLAME PRESS START"

OVERHEATING

In case the temperature inside the drum is 30°C higher than the set point temperature, at the display is flashing:



In case the heating is stopped until the temperature is not going below the safety value.



ATTENTION!

In this case the suction continues to work to cool

the linen.

In case this alarm is repeating very often, ask for a check to an authorized service centre.

MAINTENANCE NEEDED

In case the temperature inside the drum is 30°C higher than the set point temperature, the display shows the following flashing alarm:

MAINTENANCE NEEDED

Pressing one key, the machine start again without any other signal. Anyway it is necessary to call the authorised service centre for the ordinary maintenance.

DOOR OPEN

If the door is opened during the drying cycle, the machine stops. The display shows:

P01 DOOR OPEN

The machine is in pause: close the door and start again the cycle pressing START.

FILTER DOOR OPEN

If the filter door is open, the dryer stops. The display shows:

FILTER DOOR OPEN

The machine is in pause: close the filter door and start again the cycle pressing START.

FAN THERMAL

If the fan motor overheats, the dryer stop and the display shows:

FAN THERMAL ALARM

Turn off the dryer and ask for the authorised service centre intervention.

DRUM MOTOR THERMAL

If the drum motor overheats, the dryer stops and the display shows:

DRUM MOTOR THERMAL ALARM

Turn off the dryer and ask for the authorised service centre intervention.

TEMPERATURE PROBE FAILURE

If the temperature probe is damaged, the display shows:

TEMPERATURE PROBE FAILURE

Turn off the dryer and ask for the authorised service centre intervention.

AIR DEPRESSOR TRANSDUCER CLOSED

If the air depressor transducer is damaged, the display shows:

*AIR DEPRESSOR TRANSDUCER
CLOSED*

Ask for the authorised service centre intervention.

AIR EXHAUST

If there is a problem with the humid air exhaust, the display shows:

AIR EXHAUST ALARM

Ask for the authorised service centre intervention.

FILTER CLEANING CHECK

If the filter is dirty, the display shows:

CHECK FILTER CLEANING

Turn off the machine, open the filter door and clean the filter.

COIN BLOCKED

If the machine is configured to work with a coin box, the display shows:

COIN BLOCKED

It means that the coin is blocked inside the coin box for more than 5 seconds. Check the credit and ask for the authorised service centre intervention.

This alarm appears also if the coin blocked while a cycle is running, i.e. when extra time is bought. In this case the program is going on and completed, even if the alarm stays displayed. If the coin box should suddenly make free, the alarm would be automatically reset.

44. DRYER MAINTENANCE**ATTENTION!**

There is a risk of injuring yourself or damaging the equipment.

Each ordinary and extraordinary maintenance intervention must be operated by qualified personnel.

All the dryer supply connection must be cut off before any maintenance intervention on the machine.

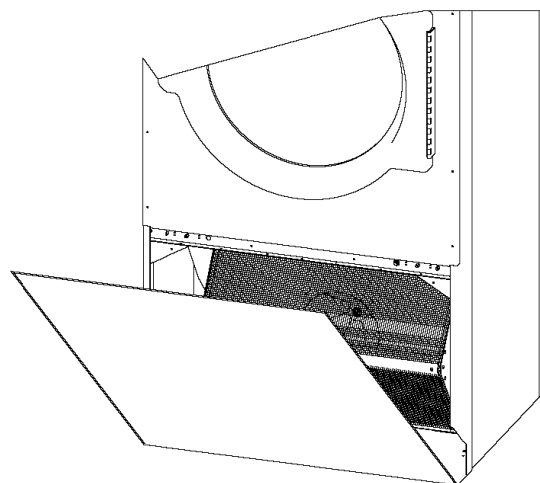
Do not use water or stem to clean the parts.

In the following paragraphs are explained the necessary ordinary and extraordinary maintenance and how they need to be scheduled. Avoid the fluff backlog around the dryer (this note in not necessary in case of dryer with external exhaust).

For the daily cleaning, a wet and soft cloth must be used. Do not use abrasive products, abrasive sponge, solvents or metallic objects.

EACH CYCLE

At the end of each drying cycle, clean the filter from the fluff.



To clean the filter, open the door or pull the drawer (for some models), in order to access to the filter room.

In case of model with filter door, the filter must not be removed.

For model with filter drawer, empty the filter bag paying attention to not damage the net.

In both cases, the fluff must be removed from the filter using the hands, do not use sharpened

object



ATTENTION!

Never use the dryer without the fluff filter. If the filter is damaged, replace it immediately.

EACH WEEK

Check the drum cleaning condition: there must no be deposit on the drum. Be sure that there are not stains due to melted nylon seams, button and other.



ATTENTION!

To clean the drum, do not use a high pressure or a water continuously cleaner.

The drum must be cleaned with a dried and soft cloth.

EACH THREE MONTHS

Check the fan and the suction cleanness. Check the drum and the ventilator motor cooling fans cleanness.

EACH YEAR

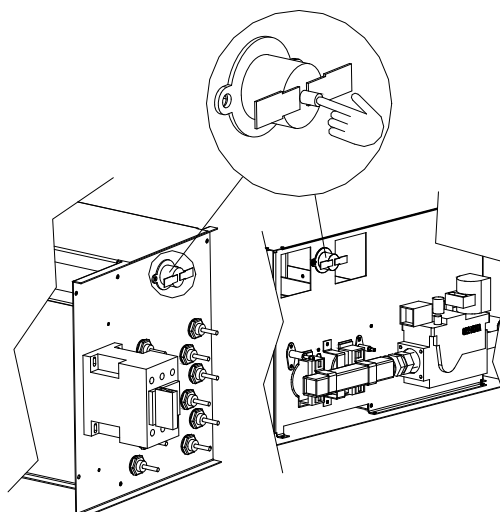
An authorized service centre must be contacted to:

- clean the burner or the heating element from fluff and other
- clean the dryer inside
- control the pneumatic tightness
- control the gas tightness

WHEN NECESSARY

In case the temperature inside the burner reaches too much higher values, a safety thermostatic paste stops the heating system: the drum continues to rotate, but the heating system stay deactivated.

The thermostatic paste need to be manually rearmed, in this case it is necessary to turn off the dryer, cut all the energy supply, open the above frontal door and press the brown coloured push button near the thermostatic paste.



If the problem should repeat, switch off the dryer and call the authorised service centre.



ATTENTION!

In case of tilting dryers, before to start any maintenance service, control that the air system is completely discharged and no pneumatic movement can be activated, even when if there is no electricity supply.

In case of maintenance with mechanism, which are not in the rest position, be sure to mechanically and safely block the pneumatic mechanism.

45. DRYING PROBLEMS

In case of not satisfying drying results, please check the following table to find a solution to the most usual problems.

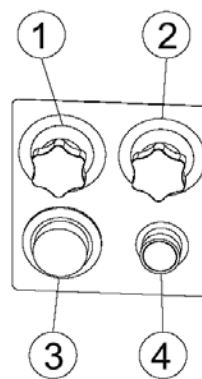
PROBLEM	SOLUTION
The linen presents yellow stains.	Check if the linen is correctly rinsed and all the soap is washed away. The PH value must be included between 5 and 6.
The linen is yellowed.	Check that the drying temperature is complying with the data on the label.

PROBLEM	SOLUTION
At the end of the cycle linen is still wet.	<p>Check the selected temperature, it could be too much low.</p> <p>Check the air suction system, it could be blocked and its efficiency limited.</p> <p>Check the exhaust system: it could be too much strong avoiding the air to pass through the linen.</p>
At the end of the cycle linen is hardened	Check the cycle temperature, especially in case of linen fabrics. If temperature is too much high, the fabrics is going to harden.
At the end of the cycle linen is felted	Check clothes label and their conformity with the dryer use, especially in case of wool or mixed wool fabrics. In this case avoid a complete drying.
The drum is scratched. Some clothes are damaged, torn	Metallic objects like buckle, hooks, fastenings must be covered with a cloth before to dry, so the drum is protected by scratches or collisions, which could also damage the linen.

46. DUAL TIMER DRYER: USE

Until now it was treated only the case of a microprocessor controlled dryer.

It is also available a simplified dryer model, which is controlled by electromechanical commands. For this dryer the control is the following:



Marks 1 and 2 indicate the heating and the cooling timers.

Marks nr 3 indicates the thermostat and the marks nr 4 the START button.

In this picture is not preset the RESET button, which equips only gas heated dryers.

Load the machine and close the door; all the instructions given in the previous paragraphs must be respected.

Fix the heating and cooling times using the two timers; fix the drying temperature using the thermostat.

Press the START button.

The START button lights on and the cycle starts and runs until its end.

In case the drum door or the filter door are opened, the cycle stops: to start it again press START.

If the START button does not light on, and the cycle does not start, when the button is pressed ask for the intervention of an authorised service centre.

Only in case of gas heated dryers: if the burner does not start, the red RESET button lights on to signal the flame control block.

In this case the machine continues to work, but the heating is deactivated. To unlock the flame control, press the RESET button until it lights off.

In case the RESET button light on often, ask for a dryer check to an authorized service centre.

47. TILTING DRYER: USE

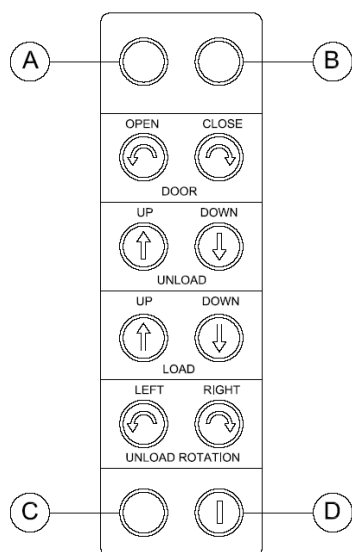
In case the dryer is equipped with a tilting system, to the previous paragraphs indication, the following remarks need to be added to control the right and left drum rotation.

In this case the controls can be given using a remote keyboard.



ATTENTION!

When the machine is in the tilting step, or the pneumatic door is opening, the user must not stay close to the machine and control the dryer using the remote keyboard.



Before to start the tilting, always wait for the end of the running cycle.

To activated or deactivate the keyboard use the key – switch (D).

When the keyboard is on, the microprocessor is off.

If the keyboard is on, the green light is also on (A).

LOADING (for machine equipped with two way tilting)

Switch on the keyboard using the key. To open the door press at the same time the activation key (below at left) and the “DOOR OPEN” key.

When the door opening is complete, make the dryer bend to the back pressing at the same time the activation key (C) and the “LOAD UP” key.

When the loading is completed, bring the dryer in the original position pressing at the same time the activation key (C) and the “LOAD DOWN” key.

Close the door pressing at the same time the activation key (C) and the “CLOSE DOOR” key.

Switch off the keyboard using the key (D).

UNLOADING

Switch on the keyboard using the key (D).

To open the door press at the same time the activation key (C) and the “DOOR OPEN” key.

When the door opening is complete, make the dryer bend forward pressing at the same time the activation key (C) and the “UNLOAD DOWN” key.

When the machine is in the unloading position, the linen exit can be helped by the slow alternate rotation of the drum (right and left); to make the drum rotate, press at the same time the activation key (C) and the “UNLOAD ROTATION” key (RIGHT and/or LEFT).

When the unloading operation is ended, bring the dryer to the original position pressing at the same time the activation key (below – left) and the “UNLOAD UP” key.

Close the door pressing at the same time the activation key (C) and the “CLOSE DOOR” key. Switch off the keyboard using the key (D).

48. SAFETY DEVICE CONTROL

After the machine is turned on, before to start the drying cycle, it is necessary to control the safety device correct working.

The user should always stick to the following procedure:

ACTION SEQUENCE	REACTION
Start a drying cycle and open the door...	... the dryer should stop and stay in pause.
Start a drying cycle and open the filter door...	... the dryer should stop and stay in pause.
Press (if present) the emergency stop button the drum should stops and the dryer should turn off.
As soon as the dryer is electrically supplied the machine must be in stand-by waiting for a command (drum stopped, fan and heating deactivated)



ATTENTION!

Safety device must always be tested when the machine is switch on and before to start the working shift.

49. SCRAPPING

When the machine life cycle arrives to the end, please proceed with the machine scrapping following the country rules, keeping separate the metallic, the plastic, the glass, the electric/electronic parts.



The above symbol on the appliance or on the package means that at the end of its life cycle this product must be collected separately from other waste material.

For this appliance waste separation, follow the rules in force in the Country where the machine is installed.

A correct waste separation avoid dangerous impact on the environment and make easier the material recycling.

Unlawful disposal may caused application of

administrative sanction, following the rules in force in the country where the dryer is installed.

**ATTENTION!**

In case the machine should not be more used before the dryer disposal, make the door lock out of service, to avoid that somebody close himself inside risking his life.

Electric supply cable must be disconnected and disposed.

50. WARRANTY CONDITION

For the warranty condition, check the manufacturer price list.

**ATTENTION!**

To benefit of the manufacturer warranty condition, the manual instructions must be carefully followed. In particular:

- Work always respecting the dryer use limits;
- Maintenance must be always correctly operated;
- The dryer must be used only by well trained personnel;
- Use only original spare parts.

51. TECHNICAL DATA 10-34

MODEL	U.M.	10	14	18	23	34
MAIN FEATURES						
CAPACIY 1/20 and 1/25	kg	10 / 7,4	14 / 10	18 / 13,5	23 / 17,4	34 / 25,6
REVRSing	-	OPTIONAL	OPTIONAL	OPTIONAL	SI / YES	SI / YES
DIAMETRO CESTO	Ø mm	756	756	756	977	977
DRUM DEPTH	mm	420	585	767	590	870
LOADING DIAMETER	Ø mm	560	560	560	560	560
STANDARD SPEED	rpm	38	38	38	38	38
NOISE	dB(A)	61	61	61	61	61
LOSS AT SHELL	%	15	15	15	15	15
AIR/BURN GAS EXHAUST (pos.6)	Ø mm	150	150	150	200	200
AIR FLOW	m ³ /h	1200	1200	1200	1680	1680
BACKPRESSURE	mt	10	10	10	10	10
NET WEIGHT (electric / gas / steam)	kg	203 / 201 / 207	217 / 215 / 221	233 / 230 / 234	286 / 287 / 290	323 / 321 / 323
STANDARD PACKAGE						
WIDTH	mm	840	840	840	1060	1060
DEPTH	mm	740	890	1070	950	1220

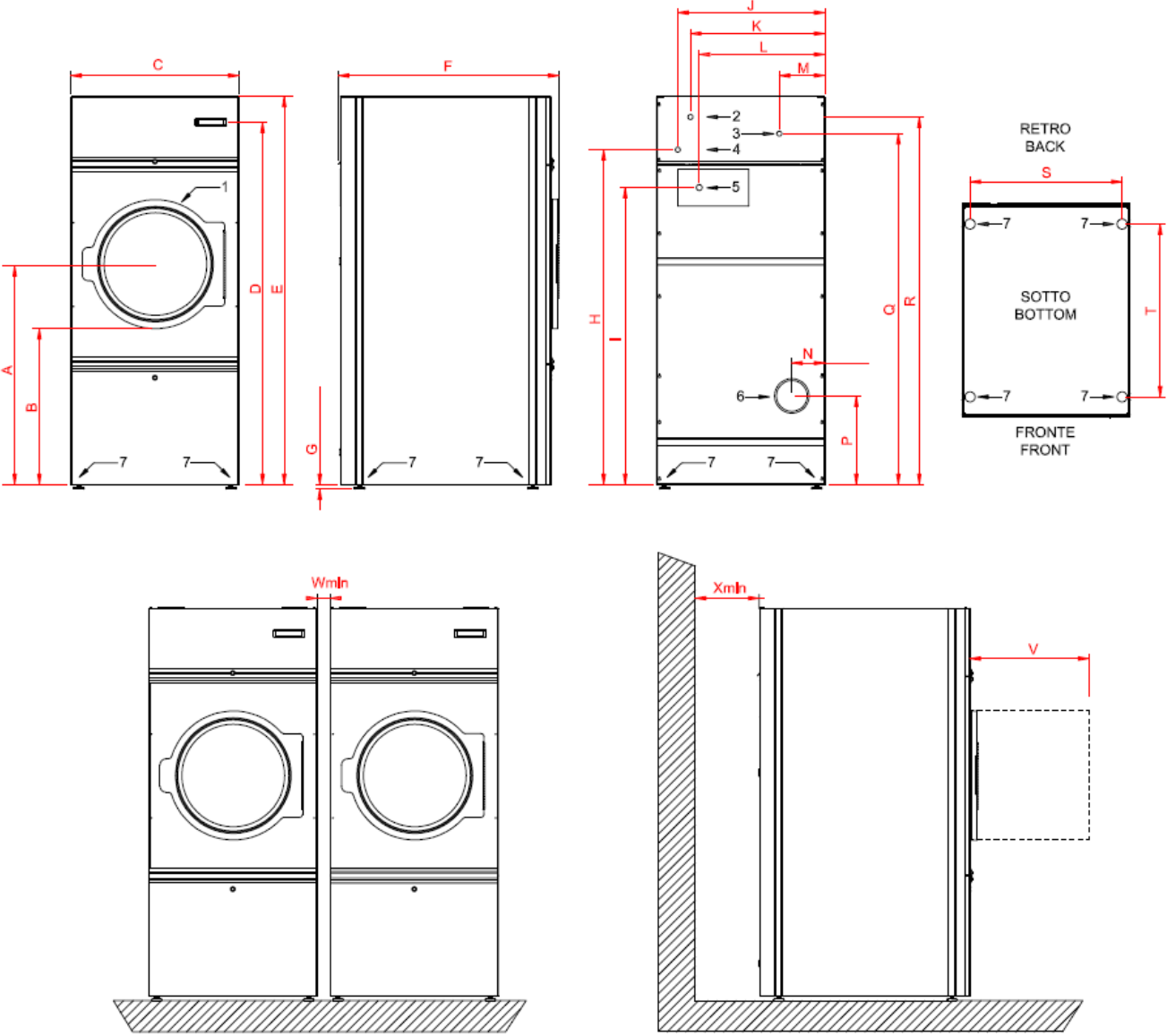
MODEL	U.M.	10	14	18	23	34
HEIGHT	mm	1882	1882	1882	1974	1974
VOLUME	m ³	1,17	1,4	1,7	1,98	2,55
GROSS WEIGHT (electric / gas / steam)	kg	210 / 208 / 214	225 / 223 / 229	245 / 242 / 246	298 / 300 / 303	341 / 339 / 341
HEATING						
ELECTRIC HEATING	kW	18	18	24	24	36
STEAM (pos. 2=IN; pos. 3=OUT) STEAM CONSUMPTION*	Ø IN	1"	1"	1"	1"	1"
	Ø OUT	1"	1"	1"	1"	1"
	bar	1÷15	1÷15	1÷15	1÷15	1÷15
	kg	26 (5bar)	36 (5bar)	46 (5bar)	49 (5bar)	73 (5bar)
GAS (pos. 4) GAS CONSUMPTION*	kW	29,4	29,4	29,4	37,8	50,4
	Ø IN	¾"	¾"	¾"	¾"	¾"
	m ³ (G20)	0,7	1	1,2	1,6	2,3
	kg (GPL / GLP)	0,5	0,7	0,8	1,1	1,6
ELECTRIC ABSORPTION (pos. 5)						
ELECTRIC HEATING	kW	18,7	18,7	24,7	25,1	37,1
3ph380V-480V (+N) / 3ph220V-240V / 1ph230V 50/60Hz	A	27 / 48 / 82	27 / 48 / 82	35 / 62 / 106	37 / 64 / 110	54 / 94 / 162
CABLE SECTION	mm ²	10 / 10 / 25	10 / 10 / 25	10 / 16 / 25	10 / 16 / 25	16 / 35 / 25

MODEL	U.M.	10	14	18	23	34
CONSUME*	kWh	6,7	9,3	11,9	15,4	22,6
STEAM / GAS HEATING	kW	0,7	0,7	0,7	1,1	1,1
3ph380V-480V (+N) / 3ph220V-240V / 1ph230V 50/60Hz	A	1,5 / 3 / 4	1,5 / 3 / 4	1,5 / 3 / 4	2,1 / 4 / 6,3	2,1 / 4 / 6,3
CABLE SECTION	mm ²	2,5 / 2,5 / 2,5	2,5 / 2,5 / 2,5	2,5 / 2,5 / 2,5	2,5 / 2,5 / 2,5	2,5 / 2,5 / 2,5
CONSUME*	kWh	0,2	0,2	0,2	0,4	0,5

NOTE: Technical data refers to reversing drum equipped machines.

NOTE: Machine is mounted on 4 adjustable feet (pos. 7) with tread M10.

*Standard cycle: load at the nominal capacity using wet cotton (180gr/m²) with a 50% residual humidity for a 0% residual humidity output. 3' cooling.



[mm]	10	14	18	23	34
A	971	971	971	1061	1061
B	691	691	691	781	781
C	791	791	791	1022	1022
D	1610	1610	1610	1691	1691
E	1760	1760	1760	1932	1932
F	707	874	1051	918	1188
G	15÷20	15÷20	15÷20	15÷20	15÷20
H	1508	1508	1508	1496	1496
I	1302	1302	1302	1496	1496
J	622	622	622	921	921
K	576	576	576	685	685
L	563	563	563	921	921
M	208	208	208	327	327
N	157	157	157	193	193
P	422	422	422	422	422
Q	1576	1576	1576	1691	1691
R	1666	1666	1666	1776	1776
S	714	714	714	945	945
T	487	654	831	671	952
V	560	560	560	560	560
Wmin	10	10	10	10	10
Xmin	500	500	500	500	500

DRYERS 10 - 34

52. TEHCNICAL DATA 55-75

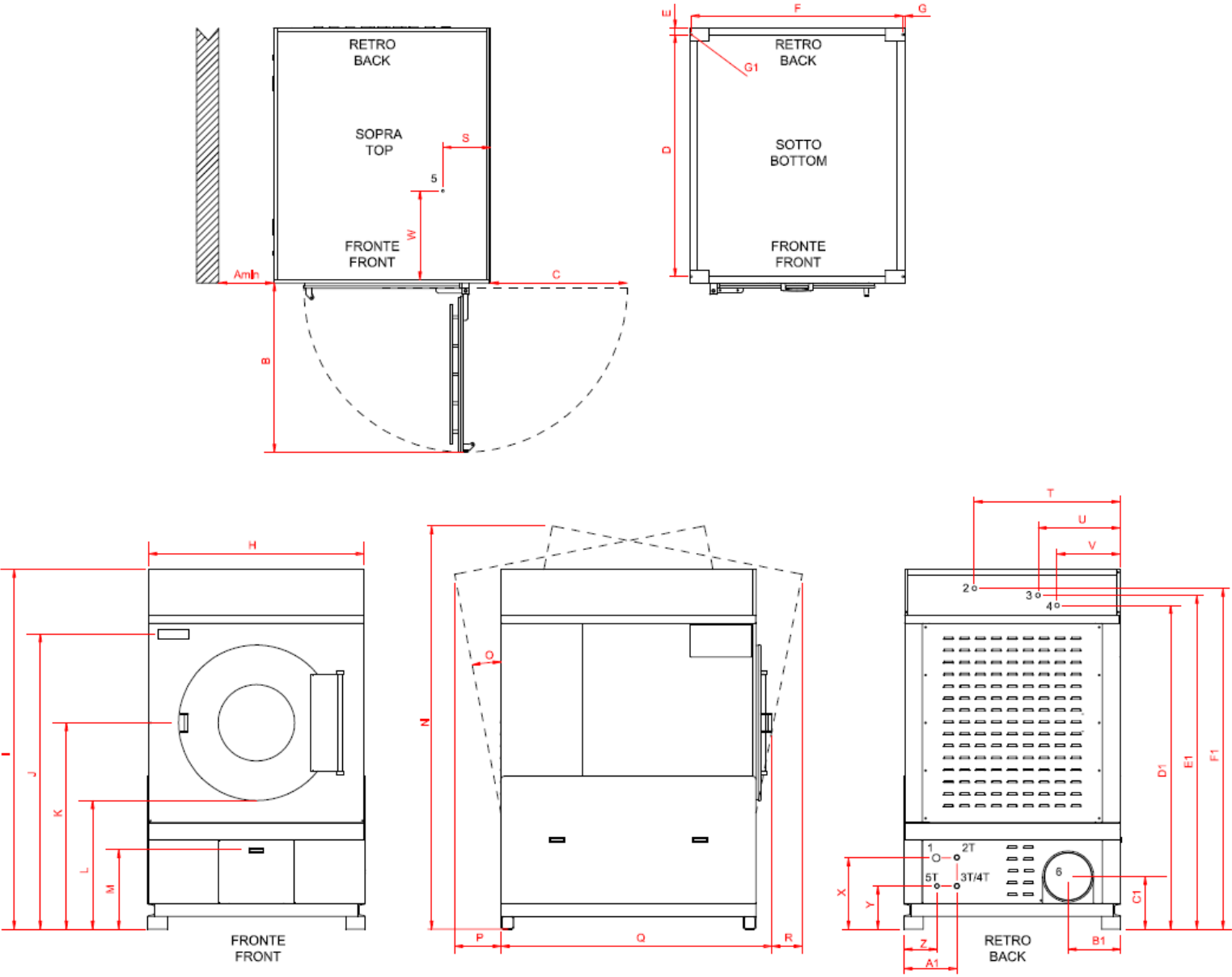
MODEL	U.M.	55	55 T	75	75 T
MAIN FEATURES					
CAPACITY 1/20 and 1/25	kg	55 / 43,5	55 / 43,5	75 / 60	75 / 60
REVERSING DRUM	-	SI	SI	SI	SI
DRUM DIAMETER	Ø mm	1202	1202	1202	1202
DRUM DEPTH	mm	960	960	1310	1310
LOADING DIAMETER	Ø mm	890	890	890	890
STANDARD SPEED	rpm	25	25	25	25
NOISE	dB(A)	74	74	74	74
LOSS AT SHELL	%	15	15	15	15
AIR / BURN GAS EXHAUST (pos.6)	Ø mm	300	300	300	300
AIR FLOW	m ³ /h	1980	1980	1980	1980
MAX BACKPRESSURE	mt	10	10	10	10
NET WEIGHT (electric / gas / steam) STD or NET WEIGHT (electric / gas / steam) 1 WAY / 2 WAYS	kg	813 / 829 / 822	821 / 837 / 830 828 / 844 / 837	1135 / 1156 / 1147	1143 / 1164 / 1155 1150 / 1171 / 1162
STANDARD PACKAGE					
WIDTH	mm	1540	1540	1540	1540
DEPTH	mm	1700	1700	2050	2050

MODEL	U.M.	55	55 T	75	75 T
HEIGHT WITH PALLET	mm	2422	2422	2422	2422
HEIGHT WITHOUT PALLET (FOR CONTAINER)	mm	2272	2272	2272	2272
VOLUME WITH PALLET / WITHOUT PALLET	m ³	6,3 / 5,9	6,3 / 5,9	7,6 / 7,1	7,6 / 7,1
GROSS WEIGHT (electric / gas / steam) STD or GROSS WEIGHT (electric / gas / steam) 1 WAY / 2 WAYS	kg	882 / 898 / 891	889 / 905 / 898 897 / 913 / 906	1199 / 1220 / 1211	1206 / 1227 / 1218 1214 / 1235 / 1226
HEATING					
ELECTRIC HEATING	kW	58,5	58,5	97,5	97,5
STANDARD STEAM (pos. 2=IN; pos. 3=OUT) TILTING STEAM (pos. 2T=IN; pos. 3T=OUT) STEAM CONSUME (10bar)*	Ø IN	1 ¼"	1 ¼"	1 ½"	1 ½"
	Ø OUT	1"	1"	1 ¼"	1 ¼"
	bar	15	15	15	15
	kg	71	71	97	97
STANDARD GAS (pos. 4) TILTING GAS (pos. 4T) GAS CONSUME*	kW	95	95	115	115
	Ø IN	1 ¼"	1 ¼"	1 ¼"	1 ¼"
	m ³ (G20)	3,8	3,8	5,2	5,2
	kg (GPL / GLP)	2,6	2,6	3,5	3,5
ELECTRIC ABSORPTION (pos. 1)					
ELECTRIC HEATING	kW	60,7	60,7	100,5	100,5
3ph380V-480V (+N) / 3ph220V-240V / 1ph230V 50/60Hz	A	88 / 152 / -	88 / 152 / -	148 / 256 / -	148 / 256 / -

MODEL	U.M.	55	55 T	75	75 T
CABLE SECTION	mm ²	16 / 35/ -	16 / 35 / -	35 / 50 / -	35 / 50 / -
CONSUME*	kWh	35,8	35,8	48,8	48,8
STEAM AND GAS HEATING	kW	2,2	2,2	3	3
3ph380V-480V (+N) / 3ph220V-240V / 1ph230V 50/60Hz	A	2,8 / 4,8 / 8,4	2,8 / 4,8 / 8,4	4 / 7 / -	4 / 7 / -
CABLE SECTION	mm ²	2,5 / 2,5 / 2,5	2,5 / 2,5 / 2,5	2,5 / 2,5 / 2,5	2,5 / 2,5 / 2,5
CONSUME*	kWh	0,7	0,7	1	1
COMPRESSED AIR					
COMPRESSED AIR IN (pos. 5) std configuration steam heating	Ø mm	6	-	6	-
COMPRESSED AIR IN (pos. 5T) tilting configuration	Ø mm	-	12	-	12
COMPRESSED AIR CONSUME (electric / gas machine)	l/h	-	100	-	100
COMPRESSED AIR CONSUME (steam machine)	l/h	5	105	5	105

NOTE: in case of tilting configuration, data refers to a 2 way tilting machine (load and unload with tilting)

*Standard cycle: load at the nominal capacity using wet cotton (180gr/m²) with a 50% residual humidity for a 0% residual humidity output. 3' cooling.



DRYERS 55 - 75

[mm]	55	55 T	75	75 T
Amin	500	500	500	500
B	1063	1063	1063	1063
C	858	858	858	858
D	1520	1520	1870	1870
E	40	40	40	40
F	1330	1330	1340	1340
G	10	10	10	10
H	1360	1360	1360	1360
I	2260	2260	2260	2260
J	1850	1850	1850	1850
K	1295	1295	1295	1295
L	807	807	807	807
M	500	500	500	500
N	-	2516	-	2516
O	-	11°	-	8°
P	-	296	-	229
Q	1700	1700	1930	1930
R	-	247	-	292
S	220	-	220	-
T	913	-	913	-
U	514	-	514	-
V	395	-	395	-
W	570	-	570	-
X	359	359	359	359
Y	-	270	-	270
Z	-	207	-	207
A1	-	331	-	331
B1	330	330	330	330
C1	330	330	330	330
D1	2032	-	2032	-
E1	2095	-	2095	-
F1	2139	-	2139	-
G1	∅ 13	∅ 13	∅ 13	∅ 13

53. GAS PRESSURE

Only in case of gas heated dryers, please check the nominal pressure data and the nozzle dimension in the next tables.

I, UK, IE, ES**Type B22, II2H3+ CE 0085-AT0341**

Max pressure in the flue: 150Pa

NATURAL GAS 2H (G20); PCI=34,02MJ/Nm³

P_n=20.000Pa

P_{max}=2500Pa; P_{min}=1700Pa

Dryer	nozzles [nr]	Ø nozzles [mm]
10	2	2,90
14	2	2,90
18	2	2,90
23	3	2,70
34	4	2,70
55	4	4,05
75	4	5,00

LIQUID GAS 3+ (G30); PCI=45,65MJ/kg

P_n=2800-3000/3700Pa

P_{max}=3500/4500Pa; P_{min}=2000/2500Pa

Dryer	nozzles [nr]	Ø nozzles [mm]
10	2	1,85
14	2	1,85
18	2	1,85
23	3	1,75
34	4	1,75
55	4	2,35
75	4	2,75

AT, CH**Type B22, II2H3+ CE 0085-AT0341**

Max pressure in the flue: 150Pa

NATURAL GAS 2H (G20); PCI=34,02MJ/Nm³

P_n=2000Pa

P_{max}=2500Pa; P_{min}=1700Pa

Dryer	nozzles [nr]	Ø nozzles [mm]
10	2	2,90
14	2	2,90
18	2	2,90
23	3	2,70
34	4	2,70
55	4	4,05
75	4	5,00

LIQUID GAS 3B/P (G30); PCI=45,65MJ/kg

P_n=2800-3000/3700Pa

P_{max}=3500/4500Pa; P_{min}=2000/2500Pa

Dryer	nozzles [nr]	Ø nozzles [mm]
-------	-----------------	-------------------

10	2	1,85
14	2	1,85
18	2	1,85
23	3	1,75
34	4	1,75
55	4	2,35
75	4	2,75

F**Type B22, IIE+3+ CE 0085-AT0341**

Max pressure in the flue: 150Pa

NATURAL GAS 2E+ (G20); PCI=34,02MJ/Nm³

P_n=2000Pa

P_{max}=2500Pa; P_{min}=1700Pa

Dryer	nozzles [nr]	Ø nozzles [mm]
10	2	2,90
14	2	2,90
18	2	2,90
23	3	2,70
34	4	2,70
55	4	4,05
75	4	5,00

LIQUID GAS 3+ (G30); PCI=45,65MJ/kg

P_n=2800-3000/3700Pa

P_{max}=3500/4500Pa; P_{min}=2000/2500Pa

Dryer	nozzles [nr]	Ø nozzles [mm]
10	2	1,85
14	2	1,85
18	2	1,85
23	3	1,75
34	4	1,75
55	4	2,35
75	4	2,75

DE**Type B22, II2ELL3B/P CE 0085-AT0341**

Max pressure in the flue: 150Pa

NATURAL GAS 2ELL (G20); PCI=34,02MJ/Nm³

P_n=2000Pa

P_{max}=2500Pa; P_{min}=1700Pa

Dryer	nozzles [nr]	Ø nozzles [mm]
10	2	2,90
14	2	2,90
18	2	2,90
23	3	2,70
34	4	2,70
55	4	4,05
75	4	5,00

NATURAL GAS 2ELL (G25); PCI=29,30MJ/Nm³

P_n=1800Pa

P_{max}=2500Pa; P_{min}=2000Pa

Dryer	nozzles [nr]	Ø nozzles [mm]
10	2	3,20
14	2	3,20
18	2	3,20
23	3	3,00
34	4	3,00
55	4	4,50
75	4	5,50

LIQUID GAS 3B/P (G30); PCI=45,65MJ/kg

P_n=2800-3000/3700Pa

P_{max}=3500/4500Pa; P_{min}=2000/2500Pa

Dryer	nozzles [nr]	Ø nozzles [mm]
10	2	1,65
14	2	1,65
18	2	1,65
23	3	1,50
34	4	1,50
55	4	2,35
75	4	2,75